

P A T E N T   C L A I M S

1. A cutting ring for disk rolls of partial and/or full cutting machines, comprising a base ring (2) made of steel or similar material and a closed hard metal ring (3) which is situated on the outer envelope (4) of the base ring (2), and a plurality of hard metal partial segments (14) arranged adjacent to one another in peripheral direction thereof on the outer envelope (4) of the base ring (2), characterized in that the base ring is divided into two axial sections (5, 6), that an annular recess (11) is formed between the radially outer sections of adjacent bearing surfaces (7, 8) of the axial sections (5, 6) for receiving the hard metal partial segments (14), and that the two axial sections (5, 6) of the base ring (2) can be compressed, by applying pressure, to form a solid composite with hard metal partial segments (14) inserted between them in the annular recess (11).
2. The cutting ring according to claim 1, wherein the annular recess (11) is formed by two partial annular recesses (9, 10), which are formed in the radially outer sections of the adjacent bearing surfaces (7, 8) of the two axial sections (5, 6) of the base ring (2), for receiving the hard metal partial segments (14).
3. The cutting ring according to claim 1 or 2, whose base ring (2) is divided axially in the centre into the two axial sections (5, 6).
4. The cutting ring according to any one of the claims 1 to 3, wherein each hard metal partial segment (14) has a projection (17, 18) protruding in peripheral direction of the cutting ring (1) on both of its end faces (15, 16).

5. The cutting ring according to claim 4, wherein the projection (17) protruding in peripheral direction on the one end face (15) of the hard metal partial segment (14) is arranged in a radially outer area of the end face (15) and the projection (18) protruding in peripheral direction of the other end face (16) of the hard metal partial segment (14) is arranged in a radially inner area of the end face.
6. The cutting ring according to any one of the claims 1 to 5, wherein the lateral faces (19, 20) of the hard metal partial segments (14) are enlarged with respect to their surface by means of projections (21) or grooves (22) which are preferably triangular in cross section.
7. The cutting ring according to any one of the claims 1 to 6, wherein a stress-compensating material layer, e.g. a nickel, chromium, chromium nickel layer or the like, is placed between the hard metal partial segments (14) and the base ring (2).
8. The cutting ring according to any one of the claims 1 to 7, wherein a stress-compensating material layer, e.g. a nickel, chromium, chromium nickel layer or the like, is placed between the adjacent hard metal partial segments (14).
9. The cutting ring according to claim 7 or 8, wherein the stress-compensating material layers are formed by means of a foil.
10. The cutting ring according to any one of the claims 1 to 9, wherein each axial section (5, 6) of the base ring (2) has an outer peripheral section (12, 13) which can be detached, preferably unscrewed, from it with which it protrudes beyond the outer periphery of the hard metal ring (3) and by means of which an annular space (24) between the outer

periphery of the hard metal ring (3) and the two outer peripheral sections (12, 13) can be closed by interacting with a corresponding outer peripheral section (13) or (12) of the other axial section (6) or (5) of the base ring (2).

11. A method for producing a cutting ring (1) of partial and/or full cutting machines, wherein a base ring (2) made of steel or similar material is joined on its outer envelope (2) with a closed hard metal ring (3) consisting of a plurality of hard metal partial segments (14) arranged adjacent to one another in peripheral direction thereof on the outer envelope (4) of the base ring (2), characterized in that the hard metal partial segments (14) forming the hard metal ring (3) are arranged on a radially outer section of a bearing surface (7) of an axial section (5) of the base ring (2) divided into two axial sections (5, 6), that the other axial section (6) of the base ring (2) is joined together with the one axial section (5) thereof and the hard metal partial segments (14) forming the hard metal ring (3) and that the two axial sections (5, 6) are compressed with the hard metal partial segments (14) between them to form a solid composite.
12. The method according to claim 11, wherein the hard metal partial segments (14) forming the hard metal ring (3) are secured in an annular recess (11) when the two axial sections (5, 6) of the base ring (2) are joined together, each half of said annular recess (11) being formed in the bearing surfaces (7, 8) of the two axial sections (5, 6).
13. The method according to claim 11 or 12, wherein a composite of hard metal partial segments (14) which is resistant to radial forces is obtained thereby that the end faces (15, 16) of adjacent hard metal partial segments (14) engage in one another in a form-locking manner.

14. The method according to any one of the claims 11 to 13, wherein the lateral faces (19, 20) of the hard metal partial segments (14) are enlarged with respect to their surface by means of projections (21) or grooves (22) which are preferably triangular in cross section.
15. The method according to any one of the claims 11 to 14, wherein a stress-compensating material layer, e.g. a nickel, chromium, chromium nickel layer or the like, is arranged between the hard metal partial segments (14) and the axial sections (5, 6) of the base ring (2).
16. The method according to any one of the claims 11 to 15, wherein a stress-compensating material layer, e.g. a nickel, chromium, chromium nickel layer or the like, is arranged between the adjacent hard metal partial segments (14).
17. The method according to claim 15 or 16, wherein the stress-compensating material layer or the stress-compensating material layers is/are formed by a foil or foils.
18. The method according to any one of the claims 11 to 17, wherein the annular recess (11) of the base ring (2) receiving the hard metal partial segments (14) of the hard metal ring (3) is closed radially outside of the hard metal ring (3) and evacuated.
19. The method according to claim 18, wherein the annular recess (11) of the base ring (2) receiving the hard metal partial segments (14) of the hard metal ring (3) is closed by means of outer peripheral sections (12, 13), radially protruding beyond the outer periphery of the hard metal ring (3), of the axial sections (5, 6) of the base ring (2).

20. The method according to claim 17 or 18, wherein the composite consisting of the two axial sections (5, 6) of the base ring (2) and the hard metal partial segments (14) are heated to a high temperature which is below the melting point of the base ring material after the annular recess (11) has been evacuated.
21. The method according to claim 20, wherein, once it has been heated to the temperature below the melting point of the base ring material, the composite consisting of the two axial sections (5, 6) of the base ring (2) and the hard metal partial segments (14) is placed under a high pressure at which the flow limit of the base ring material is exceeded, preferably of about 1,000 bar using inert gas, preferably argon.
22. The method according to claim 21, wherein, after a preset period during which the high pressure and the temperature below the melting point of the base ring material have been maintained, the temperature is slowly lowered while the high pressure is maintained.
23. The method according to any one of the claims 19 to 22, wherein the outer peripheral sections (12, 13) of the axial sections (5, 6) of the base ring (2) are unscrewed after the cooling.